



ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

Ron Fuller, Chief Electrical Inspector

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● SAFES – Strategic Action For Electrical Safety

The SAFES – Strategic Action For Electrical Safety team will soon be coming to an area near you.

The department's new SAFES team will be focusing on reducing the effects of the underground economy and increasing the general public's awareness about the dangers of electricity and the importance of using qualified licensed electrical contractors to do electrical work in the coming months. SAFES will operate as a team across the state and coordinating with local inspectors and city jurisdictions to achieve the maximum effectiveness.

The team will be made up of staff that will focus on the main concerns our customers have with the underground economy (i.e. unlicensed electrical contractors, uncertified electricians, and those who fail to obtain required electrical permits). SAFES will also discover and make referrals to the department's other programs for violations of the general contracting, industrial insurance, and jobsite safety laws. In addition, SAFES will outreach to entities that are in violation of the electrical laws but have an opportunity to become compliant without civil penalty (i.e. open window period for certain specialties available until July 2004 – see the August 2003 *Electrical Currents*).

At the conclusion of the SAFES project, the team will debrief with all jurisdictions to detail the actions and results of the team. The program's ability to locate and address those people in the underground economy will be improved as a result of the work of the SAFES team. Insight will be gained on how to most effectively interact with customers and the underground economy to promote electrical safety and compliance with the electrical laws.

● Contractors And Administrators! Inspection Requests Must Be Timely

Each electrical administrator (or master electrician) assigned to an electrical contracting firm must ensure all inspections are requested as required in the WAC rules. Failure to comply with this requirement makes the contractor and administrator/master electrician subject to citation and civil penalties.

WAC 296-46B-900(10) states: *"Requests for inspections must be made no later than three business days after completion of the electrical/telecommunications installation or one business day after any part of the installation has been energized, whichever occurs first."*

● Requirements From Building Codes That Contractors And Electricians Need To Know

On July 1, 2004 the International Building Code (IBC) and the International Residential Code (IRC- except chapters 11 and 25 through 42) will be adopted in Washington. There are specific requirements in these codes that directly affect the work done by electrical contractors and electricians. We need to be aware of installation deficiencies that do not specifically violate the NEC electrical requirements, but will have to be repaired before building inspectors can complete their inspections.

Any demolition and subsequent repair of approved electrical work needs an electrical re-inspection. We hope this information helps you avoid this additional expense and delay and "get it right the first time."

The following are shortened summaries of the referenced articles. **Some are changes from familiar past practices under the previously enforced Uniform Building Code (UBC).**

- **IRC R303.6 Stairway illumination.** Interior stairways must be provided with an artificial light source providing not less than 1 foot-candle measured at the center of treads and landings and located in the immediate vicinity of each landing. Exterior stairways must have an artificial light source located in the immediate vicinity of the top landing. Exception: An artificial light source is not required at the top and bottom landing if one is provided directly over each stairway section.
- **IRC R303.6.1 Light activation.** The control for activation of the required stairway lighting must be accessible at the top and bottom of each stairway without traversing any steps. The

illumination of exterior stairways must be controlled from inside the dwelling unit. Exception: Lights that are continuously illuminated or automatically controlled.

- **IRC R309.2 Separation required.** The garage must be separated from the residence and its attic area by not less than $\frac{1}{2}$ -inch gypsum board. Garages beneath habitable rooms must be separated from all habitable rooms above by not less than $\frac{5}{8}$ -inch Type X gypsum board or equivalent. Electricians should check with builders to verify designed wall finishes and adjust box mounting depth and mud-rings appropriately.

- **IRC R317.3.2 Membrane penetrations.** Where walls are required to have a minimum 1-hour fire resistance rating (typically common walls between duplexes and townhouses), penetrations caused by **outlet boxes on opposite sides of the wall** must be installed such that the required fire resistance will not be reduced. Listed steel boxes that do not exceed 16 square inches in area must be separated by a horizontal distance of not less than 24 inches, solid fire blocking with approved materials, both protected by listed putty pads, or other listed materials and methods. Listed boxes of other materials must be installed as tested as an approved fire-resistance-rated assembly. Every manufacturer has distinct installation requirements for their fire-rated assembly, in addition to the minimum separation requirements for steel boxes above.

- **IRC R502.8.1, R602.6, and R802.7.1 Drilling and notching-Sawn lumber.** Notches in solid lumber joists, rafters, and beams must not exceed $\frac{1}{6}$ of the depth of the member, must not be longer than $\frac{1}{3}$ of the depth of the member and must not be located in the middle $\frac{1}{3}$ of the span. Notches at the ends must not exceed $\frac{1}{4}$ the depth of the member. The tension side of members 4 inches or greater in nominal thickness must not be notched except at the ends. The diameter of holes bored or cut into members must not exceed $\frac{1}{3}$ the depth of the member and must not be closer than 2 inches to the top or bottom, or closer than 2 inches to any other hole or notch.

In addition to the requirements of NEC 300.4, holes in studs cannot exceed 40 percent of a single stud width in diameter with the edge of the hole no closer than $\frac{5}{8}$ -inch from the edge of the stud. Except the diameter may be increased to 60 percent if the studs are doubled and no more than two successive studs are bored.

- **IRC R502.8.1 & R802.7.2 Engineered wood products.** Cuts, notches and holes bored in trusses, laminated veneer lumber, glue-laminated members, or I-trusses and joists, are not permitted unless the effects of such penetrations are specifically considered in the design of the member.

- **IRC M1307.1 Appliance installation-General.** Installation of appliances shall conform to the conditions of their listing and label and the manufacturer's installation instructions. The manufacturer's operating and installation instructions must remain attached to the appliance.

● When Must A Grounding Electrode System Be Updated?

Recently electrical inspectors have reported service alterations where the panel is replaced and re-connected to the existing grounding electrode system. When a new service is installed, the installer is required to verify that the existing grounding electrode system (GEC) complies with the present code. This includes proper sizing of the GEC, connection to all available electrodes, and verification that made electrodes meet the resistance requirements of NEC 250.56.

● Electrical Question of the Month

This Month's Question: Electrical maintenance of a household electric potable water heater in a dwelling unit is within the scope of work of all of the following electrical specialties, except: **A)** 02-residential, **B)** 06A-HVAC/refrigeration, **C)** 07-nonresidential maintenance, **D)** 07D-appliance repair.

Last Month's Question: In clothes closets, recessed incandescent lighting fixtures with a completely enclosed lamp shall be permitted to be installed in the wall or on the ceiling, provided there is a minimum clearance of _____ inches between the fixture and the nearest point of a storage space. **A)** 6, **B)** 12, **C)** 18, **D)** 24. The answer is **A)** [NEC 410.8(D)(3)]